<u>IN THE CLAIMS</u>

Please replace the claims now on file with the following claims.

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1-215. (Canceled)

216. (Currently Amended) A diffractive multifocal intraocular lens ~~defining an optical axis, said diffractive multifocal intraocular lens~~ comprising:

a first surface and a second surface, said second surface opposing said first surface, said first surface having a first shape and said second surface having a second shape;

wherein said first surface includes a diffractive pattern imposed on said first shape;

wherein said ~~first surface and said second surface result in~~ intraocular lens provides a base focus and an additional focus; <u>and</u>

wherein at least one of said first shape and said second shape has an aspheric component <u>configured to reduce, for at least one of said base focus and said additional focus, a positive spherical aberration of a wavefront passing through said intraocular lens.</u> ~~; and~~

~~wherein said diffractive pattern is symmetric about said optical axis.~~

217. (Canceled)

218. (Canceled)

219. (Currently Amended) The <u>intraocular</u> lens of claim 218 wherein said <u>intraocular</u> lens is structured so that, when said wavefront is represented as a series of Zernike polynomials, a Zernike Z11 term describing said wavefront is reduced when said wavefront passes through said <u>intraocular</u> lens.

220. (Currently Amended) The <u>intraocular</u> lens of claim 219 wherein said series of Zernike polynomials comprises ~~up to at least fourth order terms~~ <u>a fourth order term</u>.

221. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein said <u>intraocular</u> lens comprises at least one of a silicone, a hydrogel, and an acrylate.

222. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein ~~the same surface defines both aspheric component and said diffractive pattern~~ <u>said second surface has said aspheric component</u>.

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223. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein an add power for said additional focus is between 2 and 6 diopters.

224. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein an add power for said additional focus is 3 to 4 diopters.

225. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein a light distribution between said base focus and said additional focus is between 70%:30% to 30%:70%.

226. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein a light distribution between said base focus and said additional focus is 50%:50%.

227. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein one of said first shape and said second shape is spherical.

228. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein said <u>intraocular</u> lens is designed to reduce wavefront aberrations of light passing into the eye when said <u>intraocular</u> lens has replaced a natural lens of an eye.

229. (Currently Amended) The <u>intraocular</u> lens of claim 216 having a base power of 18 diopters.

230. (Currently Amended) The <u>intraocular</u> lens of claim 216 having a diameter of 6 millimeters.

231. (Currently Amended) The <u>intraocular</u> lens of claim 216 having a thickness of 1.1 millimeters.

232. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein said first surface and said second surface each have radii of curvature between 12 and 13 millimeters.

233. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein said <u>intraocular</u> lens is designed to replace a natural lens of an eye.

234. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein said <u>intraocular</u> lens has a negative spherical aberration.

235. (Canceled)

236. (Currently Amended) The <u>intraocular</u> lens of claim 216 wherein said <u>intraocular</u> <u>lens defines an optical axis, and</u> at least one of said first shape and said second shape ~~that has~~ ~~said aspheric component~~ has a curvature at a periphery thereof that is less than a curvature at said

optical axis.

237.    (Canceled)

238.    (Currently Amended)  The <u>intraocular</u> lens of claim 216 wherein said at least one of said first shape and said second shape ~~that has said aspheric component~~ is characterized by a mathematical model that includes at least one of (1) terms of a conoid of rotation and (2) terms of a conoid of rotation and at least one polynomial term.

239.    (Currently Amended)  The <u>intraocular</u> lens of claim 238 wherein said terms of said conoid of rotation ~~includes~~ <u>include</u> a conic constant that is less than zero.

240.    (Currently Amended)  The <u>intraocular</u> lens of claim 238 wherein said terms of said conoid of rotation ~~includes~~ <u>include</u> a conic constant that is less than minus one.

241.    (Currently Amended)  The <u>intraocular</u> lens of claim 216 wherein said at least one of said first shape and said second shape ~~that has said aspheric component~~ is a modified conoid surface.

242.    (Currently Amended)  The <u>intraocular</u> lens of claim 216 wherein said at least one of said first shape and said second shape is characterized by a mathematical model that includes terms of a conoid of rotation and a polynomial term.

243.    (Currently Amended)  The <u>intraocular</u> lens of claim 242 wherein said <u>intraocular</u> lens is structured so that, when said wavefront is represented as a series of Zernike polynomials, a Zernike Z11 term describing said wavefront is reduced when said wavefront passes through said <u>intraocular</u> lens.

244.    (Currently Amended)  A diffractive multifocal intraocular lens ~~defining an optical axis, said diffractive multifocal intraocular lens~~ comprising:

a first surface and a second surface, said second surface opposing said first surface, said first surface having a first shape and said second surface having a second shape;

wherein said first surface includes a diffractive pattern imposed on said first shape;

wherein said <u>intraocular lens provides</u> ~~first surface and said second surface result in~~ a base focus and an additional focus; <u>and</u>

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wherein said intraocular lens is configured such that, when a wavefront expressible by a Zernike polynomial passes through said intraocular lens, said intraocular lens reduces a positive rotationally symmetric fourth order Zernike term of said Zernike polynomial.

~~wherein at least one of said first shape and said second shape has an aspheric component;~~

~~wherein said first shape is symmetric about said optical axis; and~~

~~wherein said second shape is symmetric about said optical axis.~~

245.    (Canceled)

246.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein said <u>intraocular</u> lens is structured ~~so that said aspheric component reduces~~ <u>to reduce a</u> spherical aberration of a wavefront that passes through said <u>intraocular</u> lens.

247.    (Canceled)

248.    (Canceled)

249.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein said <u>intraocular</u> lens comprises at least one of a silicone, a hydrogel, and an acrylate.

250.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein ~~the same surface defines both said aspheric component and said diffractive pattern~~ <u>said second surface has an aspheric component</u>.

251.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein an add power for said additional focus is between 2 and 6 diopters.

252.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein an add power for said additional focus is 3 to 4 diopters.

253.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein a light distribution between said base focus and said additional focus is between 70%:30% to 30%:70%.

254.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein a light distribution between said base focus and said additional focus is 50%:50%.

255.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein said <u>intraocular</u> lens has a negative spherical aberration.

256.    (Canceled)

257.    (Currently Amended)  The <u>intraocular</u> lens of claim 244 wherein said <u>intraocular</u>

lens defines an optical axis, and at least one of said first shape and said second shape ~~that has said aspheric component~~ has a curvature at a periphery thereof that is less than a curvature at said optical axis.

258. (Currently Amended) The intraocular lens of claim 244 wherein said at least one of said first shape and said second shape is prolate.

259. (Currently Amended) The intraocular lens of claim 244 wherein said at least one of said first shape and said second shape ~~that has said aspheric component~~ is characterized by a mathematical model that includes at least one of (1) terms of a conoid of rotation and (2) terms of a conoid of rotation and at least one polynomial term.

260. (Currently Amended) The intraocular lens of claim 259 wherein said terms of said conoid of rotation ~~includes~~ include a conic constant that is less than zero.

261. (Currently Amended) The intraocular lens of claim 259 wherein said terms of said conoid of rotation ~~includes~~ include a conic constant that is less than minus one.

262. (Currently Amended) The intraocular lens of claim 244 wherein said at least one of said first shape and said second shape ~~that has said aspheric component~~ is a modified conoid surface.

263. (Currently Amended) The intraocular lens of claim 244 wherein said at least one of said first shape and said second shape is characterized by a mathematical model that includes terms of a conoid of rotation term and a polynomial term.

264. (Canceled)

265. (New) The intraocular lens of claim 216 wherein said first shape has the aspheric component.

266. (New) The intraocular lens of claim 216 wherein said aspheric component is configured to reduce, for an average cornea, and by a predetermined fraction, a rotationally symmetric fourth order Zernike term of said wavefront, when said wavefront is expressed as a Zernike polynomial.

267. (New) The intraocular lens of claim 216 wherein said intraocular lens is characterized by a modulation transfer function for said base focus and said additional focus that

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is at least 0.2 at a spatial frequency of 50 cycles per millimeter, when measurements are performed in an average eye model using a 5 millimeter aperture.

268. (New) The intraocular lens of claim 216 wherein said intraocular lens is characterized by a modulation transfer function for said base focus and said additional focus that is more than 0.4 at a spatial frequency of 50 cycles per millimeter, when measurements are performed in an average eye model using a 5 millimeter aperture.

269. (New) The intraocular lens of claim 244 wherein said first shape has an aspheric component.

270. (New) The intraocular lens of claim 244 wherein at least one of said first surface and said second surface is configured to reduce, for an average cornea, and by a predetermined fraction, a rotationally symmetric fourth order Zernike term of said wavefront.

271. (New) The intraocular lens of claim 244 wherein said intraocular lens is characterized by a modulation transfer function for said base focus and said additional focus that is at least 0.2 at a spatial frequency of 50 cycles per millimeter, when the measurements are performed in an average eye model using a 5 millimeter aperture, when the measurements are performed in an average eye model using a 5 millimeter aperture.

272. (New) The intraocular lens of claim 244 wherein said intraocular lens is characterized by a modulation transfer function for said base focus and said additional focus that is more than 0.4 at a spatial frequency of 50 cycles per millimeter, when the measurements are performed in an average eye model using a 5 millimeter aperture.